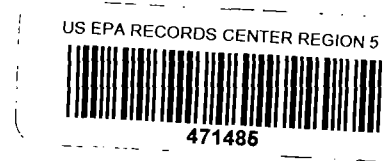


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TestAmerica, Inc.

Dayton Division



Standard Operating Procedure

Analyte or Suite: Sample Management

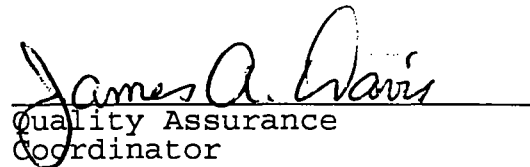
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Approvals:


Division Manager


Quality Assurance
Coordinator

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1. INTRODUCTION AND SCOPE

This SOP will provide an outline for the handling of various types of samples from the different regulatory authorities. This covers samples for Potable, NPDES, RCRA, and VAP analysis.

2. SUMMARY OF METHOD

It is the purpose of this SOP to establish an outline for sample management. Sample management includes sample receipt and chain of custody, sample log-in, sample storage and handling, and sample disposal. Each of these areas is outlined in this SOP.

3. SAFETY

Each employee is directly responsible for complete awareness of all health hazards associated with every chemical that he/she uses. The employee must be aware of these hazards, and all associated protective wear and spill clean-up procedures PRIOR TO THE USE of any chemical. In all cases, both the applicable MSDS and supervisor or Safety Officer should be consulted. The employee should comply with all safety policies as presented in the TestAmerica safety manual. The bottle labels also provide important information that must be noted. Personnel performing this procedure may be working with flammables, poisons, toxins, carcinogens, teratogens, mutagens, and biohazards. In particular, approved gloves, safety glasses, and lab coats must be worn, and solvents will be handled in ventilated hoods, in addition to other measures prescribed by the Division. It should be noted samples must be handled with as much care as any of the materials used in this method due to the unknown nature of their composition.

4. SAMPLE RECEIPT AND CHAIN OF CUSTODY

4.1 Laboratory custody of the sample begins at time of sample receipt. The following procedures must be followed when receiving samples. These procedures ensure that sample receipt is done in such a way as to maintain the sample's integrity and to provide proper documentation.

4.2 Typically, samples are received by the laboratory during normal business hours (8 AM to 5 PM, Monday thru Friday).

Samples arrive at the laboratory in several ways such as client delivery, private courier services, U.S. Mail, TestAmerica personnel, and field sampling crews.

4.3 All samples are received by the customer service team. A member of the customer service team is responsible for signing the delivery forms from the courier if necessary. The sample coolers are taken to the log-in area for completing the process.

4.4 The sample cooler temperature must be checked as soon as possible after sample receipt. This is done with a calibrated temperature gun. The temperature of the cooler needs to be documented on the chain of custody. The cooler temperature should be between 2 and 6 degrees Celsius.

4.5 The chain of custody must be located and removed from the cooler. The following information should be recorded at time of receipt, if applicable:

- * Verify custody seal intact.
- * Cooler temperature.
- * Verify sample containers are intact.
- * Verify that sample containers match chain of custody.
- * Verify that samples are within holding times.
- * Verify all necessary client information is present and correct.

If there are any problems with the items listed above, the client must be contacted prior to proceeding with the analysis.

4.6 The chain of custody must be signed, dated and time stamped with actual time of receipt by the person accepting the samples for the laboratory.

4.7 The client must make arrangements for samples that are received outside of normal business hours. When samples are received after hours, the chain of custody must be dated and time stamped at time of receipt as well as signed. The cooler temperature must also be recorded. After this has been completed, the cooler along with the chain of custody is placed in the walk-in cooler until the samples can be logged in.

4.8 Samples that require a pH preservation check and/or residual chlorine check are checked at time of analysis.

5.SAMPLE LOG-IN

5.1 Samples are logged in to the Laboratory Information Management System (LIMS). Each sample will be assigned a unique sample number. Groups of samples from the same client can be assigned a unique Job Number. This aids in the sample management process.

5.2 The log-in personnel compare the samples received against the chain of custody and, if applicable, a log-in quote. Log-in quotes are often used for routine scheduled analysis and large projects. The log-in personnel will then group the samples by parameter, matrix, etc.

5.3 The samples are logged in and sample labels, order confirmations, and log-in sheets are generated. The sample labels are placed on the sample containers. The order confirmation, log-in sheet, chain of custody along with any shipping information such as an airbill are stapled together for review by the project management team. The log-in sheet contains the various tests requested and the order confirmation contains the pricing information.

5.4 Log-in personnel distribute the samples to the appropriate storage areas in the laboratory.

6. SAMPLE STORAGE AND HANDLING

6.1 In order to satisfy the custodial and evidentiary requirements of sample handling requirements, the following procedures must be adhered to at all times.

6.1.1 Samples will be stored in a secured area.

6.1.2 Access to the laboratory will be through a monitored reception area. Outer doors to the analytical laboratory will be kept locked and will only be used in case of emergency. After working hours, the laboratory is protected by a monitored security and fire system.

6.1.3 Visitors are escorted while in the laboratory.

6.1.4 After a sample has been removed from storage by the analyst, the analyst is responsible for custody of the sample. Each analyst shall return the sample to proper storage after

completion of the preparation/analysis.

6.2 Samples that require temperature preservation will be stored in coolers and refrigerators at between 2 and 6 degrees Celsius until complete. Temperatures are to be monitored daily.

6.3 Samples requiring volatile analysis will be stored separately from other samples. Samples requiring potable volatile analysis must be stored in their own refrigerator.

6.4 Upon completion of analysis, samples can be moved to a secondary storage area. Samples will be stored a minimum of thirty days past the analytical date prior to disposal.

6.5 Any samples that are expected to be highly contaminated should be isolated from other samples. This can be done by storing in a plastic Ziploc bag or placing the sample(s) on it's own shelf or by storing the sample container in a larger sample container.

7. SAMPLE DISPOSAL

7.1 Prior to sample disposal, it must be determined if the sample is hazardous based on the following assessments:

a. The lab data and any background information must be evaluated to determine if the sample is hazardous based on the characteristics of ignitability, reactivity, and corrosivity. All samples that have been determined to be hazardous will have a bright orange label placed on them that indicates the hazard detected.

b. For Non-aqueous samples, compare the contaminants in the sample with the listed hazardous wastes in 40 CFR 261. If any of these listed wastes are present in the sample, the sample must be treated as hazardous waste.

c. If TCLP analysis was performed on a sample, then compare the results to the Toxicity Characteristic Criteria. If the leachate exceeds the maximum concentration listed for any constituent, then the sample must be treated as hazardous waste. If TCLP analysis was not performed, then this criteria is not used as part of the assessment.

d. Samples containing greater than 50ppm PCBs must be segregated for disposal according to 40 CFR 761 and are considered hazardous.

e. If it can not be determined if a sample is hazardous or not, consult the Division Manager and/or the Safety Officer.

7.2 If a sample is not identified as hazardous after comparison to the criteria listed in Section 7.1 and project management has not identified any other possible hazards associated with the sample then it is considered non-hazardous.

7.3 Sample Disposal Procedures

7.3.1 Non-hazardous aqueous samples can be flushed down the drain with large amounts of running water. Rinse the sample containers and discard.

7.3.2 Non-hazardous soil and solid samples will be removed from their original containers and "bulked" into a drum for TCLP testing and disposal. Empty containers are discarded. After the drum is full, a core sample is taken and then analyzed for TCLP. If the leachate does not exceed the maximum concentrations for any of the TCLP constituents then the drum is considered non-hazardous and can be disposed of as non-hazardous, non-regulated waste.

7.3.3 Hazardous Aqueous samples are to be returned to the client by regular ground or air transportation. They are still considered environmental samples at this point and not hazardous waste.

7.3.4 Hazardous Soils and Solids can be disposed of in three ways.

7.3.4.1 Samples can be returned to the client as described in Section 7.3.3.

7.3.4.2 Samples can be left in their original containers, grouped by hazard type and held for disposal by a hazardous waste hauler. The waste hauler will lab pack the samples prior to removal.

7.3.4.3 Samples can be bulked in a drum for disposal by a hazardous waste hauler. Empty containers must be washed and

triple rinsed prior to discarding. The drum must have a "Hazardous Waste" label on it and a start date. Drums must not be held longer than 180 days prior to disposal.

7.3.5 Disposal of samples containing more than 50 ppm of PCBs require special handling. Some basic requirements are that they must be disposed yearly. They also must be stored in an area that has no floor drains or openings and made of an impervious material such as concrete. All containers must have a label placed on them that says "Caution Contains PCBs". PCB waste must never be combined with any other type of waste.

7.3.5.1 Samples containing greater than 50 ppm of PCBs may be returned to the client as described in Section 7.3.3 but must contain the following label "Class 9, Miscellaneous Hazardous Material, UN 2315".

7.3.5.2 Samples containing greater than 50 ppm of PCBs may be left in their original containers, grouped by hazard type and held for disposal by a hazardous waste hauler. The waste hauler will lab pack the samples prior to removal.

7.3.5.3 Samples containing greater than 50 ppm of PCBs may be be "bulked" in a drum for disposal by a hazardous waste hauler. Empty containers must be washed and triple rinsed prior to discarding. The drum must have a "Hazardous Waste" label as well as the "Caution Contains PCBs" label on it and a start date. Drums must not be held longer than 1 year prior to disposal.

8. REFERENCES

8.1 40 CFR 260, 261, 262, 761

8.2 Understanding the Small Quantity Generator Hazardous Waste Rules EPA/530-SW-86-019, September 1986